

etched in locations that consider these design features along with the goal to mitigate noise, such as the modulated noise affecting the receiver.

[0061] As shown, the EBG slot barrier 67E may be etched at the same location as the EBG slot barrier 67D of FIG. 10 since the display flex 81 does not overlap with the EBG slot barrier 67E location. However, the EBG structure 65 of the second EBG slot barrier 68B is smaller to accommodate the adjacent support region 83. As such, depending on the design of the electronic device 10 and/or display 18, the etching location and/or EBG structure 65 shape, size, frequency (e.g., multiple rows), and gap 82 (FIG. 7) may be adjusted. Moreover, the number of EBG structures 65 of the EBG slot barrier 67E and the spacing between them may be based on structural support for the display 18. To further illustrate design considerations when selecting EBG structures 65 for etching, the modified mid-support plates 54F-L of FIG. 12 depict different embodiments of the modified mid-support plate 54 that are designed to support the stability and mechanical structure of the display 18 while preventing noise that may otherwise flow across the modified mid-support plate 54.

[0062] The specific embodiments described above have been shown by way of example, and it should be understood that these embodiments may be susceptible to various modifications and alternative forms. It should be further understood that the claims are not intended to be limited to the particular forms disclosed, but rather to cover all modifications, equivalents, and alternatives falling within the spirit and scope of this disclosure.

[0063] The techniques presented and claimed herein are referenced and applied to material objects and concrete examples of a practical nature that demonstrably improve the present technical field and, as such, are not abstract, intangible or purely theoretical. Further, if any claims appended to the end of this specification contain one or more elements designated as “means for [perform]ing [a function] . . . ” or “step for [perform]ing [a function] . . . ,” it is intended that such elements are to be interpreted under 35 U.S.C. 112(f). However, for any claims containing elements designated in any other manner, it is intended that such elements are not to be interpreted under 35 U.S.C. 112(f).

1. An electronic device, comprising:
 - a transceiver; and
 - a display, comprising:
 - a display substrate;
 - a mid-support plate disposed adjacent to the display substrate, wherein the mid-support plate comprises one or more electromagnetic band gap structures formed through or disposed onto the mid-support plate; and
 - a lower support plate disposed adjacent to the mid-support plate, wherein a space exists between the mid-support plate and the lower support plate.
2. The electronic device of claim 1, wherein the one or more electromagnetic band gap structures are disposed across at least 95% of a width of the mid-support plate.
3. The electronic device of claim 1, wherein the one or more electromagnetic bandgap structures are configured to mitigate or stop a surface current flow on the display.
4. The electronic device of claim 3, wherein the surface current flows from a first component to a second component, wherein first component comprises a diode, a microprocessor, a chip, a multiplexer circuit, a de-multiplexer circuit, or

a combination thereof, and wherein the second component comprises an antenna, a power amplifier, a low noise amplifier, or a combination thereof.

5. The electronic device of claim 1, wherein the one or more electromagnetic band gap structures comprises a narrowband electromagnetic band gap, a broadband electromagnetic band gap, or a combination thereof

6. The electronic device of claim 5, wherein the narrowband electromagnetic band gap mitigates or stops a surface current flow on the display for a narrowband frequency, and wherein the broadband electromagnetic band gap mitigates or stops the surface current flow for broadband frequencies.

7. The electronic device of claim 5, wherein the narrowband electromagnetic band gap comprises a straight line shape.

8. A display, comprising:

- a display substrate;
 - a mid-support plate disposed adjacent to the display substrate, the mid-support plate including one or more electromagnetic band gap structures formed through the mid-support plate, or one or more electromagnetic band gap structures disposed onto the mid-support plate, or a combination thereof; and
 - a lower support plate disposed adjacent to the mid-support plate, wherein a gap exists between the mid-support plate and the lower support plate.
9. The display of claim 8, wherein the mid-support plate and the lower support plate are conductive plates.

10. The display of claim 8, wherein the one or more electromagnetic band gap structures are configured to be disposed in a row across the mid-support plate to create a contiguous, non-contiguous, or a combination thereof, barrier across the mid-support plate.

11. The display of claim 10, wherein the barrier is disposed across at least 95% of a width of the mid-support plate.

12. The display of claim 10, wherein the barrier comprises at least two rows across the mid-support plate of the one or more electromagnetic band gap structures formed through the mid-support plate, wherein the at least two rows are disposed offset from each other.

13. The display of claim 10, wherein the barrier comprises at least one row across the mid-support plate of the one or more electromagnetic band gap structures disposed onto the mid-support plate.

14. The display of claim 10, wherein the barrier is configured to decrease a surface current from flowing across the display.

15. A support structure of a display, comprising:

- a first support plate having a first side and a second side, the first side configured to be disposed adjacent to a display layer comprising light emitting diodes (LEDs), wherein one or more electromagnetic band gap structures are formed through or disposed onto the first support plate; and
- a second support plate configured to be disposed adjacent to the second side of the first support plate, wherein a space exists between the second support plate and the second side of the first support plate.

16. The support structure of claim 15, wherein the one or more electromagnetic band gap structures are configured to be disposed across the first support plate to create a barrier across the first support plate.